DOCUMENT RESUME

ED 094 620 HE 005 735

AUTHOR El-Khawas, Elaine H.; Kinzer, Joan L.
TITLE Enrollment of Minority Graduate Students at Ph.D. Granting Institutions. Higher Education Panel Report No. 19.
INSTITUTION American Council on Education, Washington, D.C. Higher Education Panel.
SPONS AGENCY National Institutes of Health (DHEW), Bethesda, Md.; National Science Foundation, Washington, D.C.; Office of Education (DHEW), Washington, D.C.
PUB DATE Aug 74
NOTE 33p.
AVAILABLE FROM Higher Education Panel, American Council on Education, One Dupont Circle, Washington, D. C. 20036

EDRS PRICE MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS Asian Americans; *College Majors; *Enrollment; *Graduate Study; *Higher Education; *Minority Groups; Negroes; Questionnaires; Spanish Americans; Surveys

ABSTRACT

The main purpose of this survey was to gain current information on the representation of minority students within particular fields of study, a level of detail for which only limited information has been available. The survey requested enrollment information within 21 discipline areas for the total graduate population for each institution as well as for black, Spanish-surnamed, American Indian, and Asian American students. A copy of the questionnaire is presented in Appendix A of the document. The survey results indicate substantial variation in minority representation among specific fields of study. To a lesser extent, minority representation also differed according to a number of institional characteristics. The findings presented in this document constitute the most recent data available on the enrollment of minorities in specific graduate fields and should be useful to all concerned with improving the accessibility of graduate study to Americans of minority backgrounds. Appendixes contain: the survey questionnaire, institutional response, and classification of states by the census regions. (Author/PG)

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Enrollment of Minority Graduate Students At Ph.D. Granting Institutions

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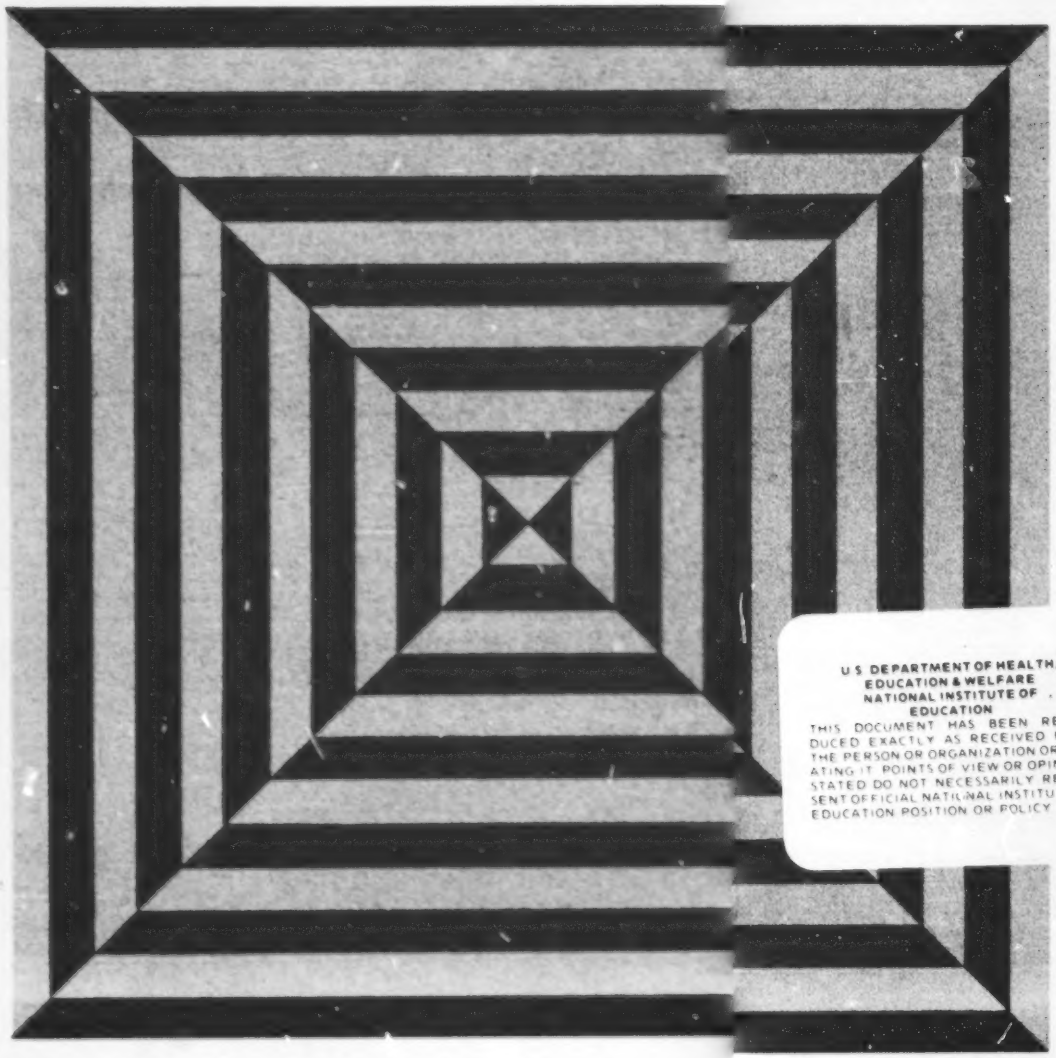
Elaine H. El-Khawas
Joan L. Kinzer



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HIGHER EDUCATION PANEL REPORTS, NUMBER 19
AMERICAN COUNCIL ON EDUCATION
WASHINGTON, D.C.

AUGUST
1974

AMERICAN COUNCIL ON EDUCATION

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The American Council on Education, founded in 1918, is a council of educational organizations and institutions. Its purpose is to advance education and educational methods through comprehensive voluntary and cooperative action on the part of American educational associations, organizations, and institutions.

The Higher Education Panel is a survey research program established by the Council for the purpose of securing policy-related information quickly from representative samples of colleges and universities. *Higher Education Panel Reports* are designed to expedite communication of the Panel's survey findings to policy-makers in government, in the associations, and in educational institutions across the nation.

The Higher Education Panel's surveys on behalf of the Federal Government are conducted under grant support provided jointly by the National Science Foundation, the National Institutes of Health, and the U.S. Office of Education (NSF Grant GR-99).

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Paula R. Knepper, *Programmer*

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Acknowledgements

A good many people have helped with the conduct of this survey. Herbert H. Rosenberg and Richard Giza, both of the National Institutes of Health, were responsible for proposing the survey and for developing the initial questionnaire. Mr. Giza also served as the NIH coordinator for this survey. As with all Panel surveys conducted for federal government agencies, this survey benefited from the suggestions offered by members of the Federal Advisory Board for HEP and its Technical Advisory Committee. Valuable insights and suggestions were offered at various stages by Bruce Hamilton, formerly of Educational Testing Service, Frank Brown, Executive Director of Urban Education, Incorporated, and Sharon Bush of the National Board on Graduate Education.

Members of the HEP Advisory Committee at ACE have been consistently helpful in reviewing the survey plan, the initial data results and drafts of this report. Paula R. Knepper was responsible for all computer-related services and assisted greatly in assuring the accuracy of the data. Gloria Walker proficiently guided all phases of preparing the manuscript for publication.

We would like, most of all, to acknowledge our debt to the many people at our Panel member institutions who provided the data for this survey. The Higher Education Panel's program derives its uniqueness and value from the cooperation given by the institutional representatives at colleges and universities across the country. We hope that the survey findings are useful to them in return.

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Enrollment of Minority Graduate Students at Ph.D. Granting Institutions*

Elaine H. El-Khawas and Joan L. Kinzer

Over the last decade, much attention in the higher education community has been focused on minority student enrollment. Most research in this area has concentrated on undergraduate populations, although some recent studies have been directed to the graduate level. In February 1974, the Higher Education Panel conducted a survey of minority graduate enrollment at Ph.D. granting institutions, at the request of the National Institutes of Health, the National Science Foundation, and the U.S. Office of Education. The main purpose of this survey was to gain current information on the representation of minority students within particular fields of study, a level of detail for which only limited information has been available. The survey requested enrollment information within twenty-one discipline areas for the total graduate population of each institution as well as for Black, Spanish-surnamed, American Indian, and Asian American students. A copy of the questionnaire is presented in Appendix A.

Methods

The data for this report were collected as part of the continuing program of the Higher Education Panel which, since 1971, has been conducting small-scale surveys on topics of general policy interest to the higher education community. The Panel is based on a network of campus representatives at a stratified sample of 646 colleges and universities.

*This survey was conducted under grant support to the Higher Education Panel provided jointly by the National Science Foundation, the National Institutes of Health, and the U.S. Office of Education (NSF Grant GR-99).

This survey was conducted among a subsample of Panel members, the 220 institutions that grant doctorate degrees.[1] Of this group, 154 institutions (70 percent) were able to provide minority enrollment data by field.[2] The accompanying tabulations and analysis are based on returns provided by these 154 institutions which comprise 53 percent of the universe of Ph.D. granting institutions (N=288). They account for roughly 60 percent of fall 1973 graduate enrollment.[3]

It should be noted that the data contained in this report do not necessarily reflect enrollment patterns of graduate institutions in general; nor are the data clearly representative of all Ph.D. granting institutions.[4] Because responding institutions differ in some respects from other Ph.D. granting institutions (see Appendix B for some comparisons) and because institutions provided their best estimates rather than precise figures, generalizations beyond the respondent sample should only be made with caution.

Nevertheless, the survey findings do provide the best available information on minority enrollment in graduate study. They are especially valuable in providing indicators of variation in minority representation among a number of specific fields of graduate study. The data should be of interest to all concerned with the progress of minorities in graduate education.

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[1] As determined by a list of 288 institutions provided by the National Research Council as of January 1974. This limited subset of institutions was surveyed rather than graduate institutions in general because it was felt that Ph.D. granting institutions were more likely than others to have records on minority enrollment.

[2] An additional 23 institutions (10 percent) were not able to report data by field of study but did provide minority data for their graduate enrollment as a whole. The responses from these institutions were included in certain tabulations (e.g. enrollment by region).

[3] Based on a comparison of the total graduate enrollment of these institutions (372,964) with the total enrollment estimate (631,697) reported by the Council of Graduate Schools in its fall 1973 enrollment survey.

[4] Neither of the two predominantly Black Ph.D. granting institutions was among respondents, for instance. One of these is a Panel member but could not readily provide the data requested.

Results

Students from minority backgrounds -- Black, Spanish-surnamed, Asian American, American Indian -- represented about 7.2 percent of the total fall 1973 graduate enrollment[5] at the 154 institutions surveyed (Table 1). The proportions, by minority group, were as follows:

Black	4.4 percent
Spanish-surnamed	1.1 percent
Asian American	1.4 percent
American Indian	0.3 percent

Public institutions enrolled a slightly larger percentage of minority graduate students (7.4 percent) than did private institutions (6.5 percent). However, enrollment patterns of minorities at both public and private schools were similar in most respects, with only minor variations by field.

Larger public and private institutions (those with over 5,000 graduate students) reported a larger percentage of minority students than did smaller schools. This general pattern primarily reflects the data for Black and Spanish-surnamed students however; the largest percentages of Asian American and American Indian students were reported by the smaller schools.

A ranking of the institutions surveyed according to overall levels of DHEW support also indicates a skewed pattern of minority representation. Institutions receiving the highest levels of support (see Table 1) showed a larger percentage of minority representation (8.1 percent) than institutions receiving the lowest levels of support (5.7 percent). Remaining institutions reported an intermediate proportion of minority enrollment (6.8 percent).

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[5] Institutions were asked to include all students (full-time and part-time) taking coursework at the graduate level, except for those working toward M.D., J.D., D.D.S. or D.V.M. degrees.

Regional differences in minority graduate enroll ment can be noted in Table 2. Higher than average figures for overall minority representation were reported for institutions in the follo wing regions:

Pacific	11.1 percent
West South Central	8.4 percent
South Atlantic	7.6 percent
East South Central	7.5 percent
Middle Atlantic	7.5 percent

Institutions in the New England, West North Centr ral, and Mountain states showed lower than average percentages of minor ity graduate enrollment. (For Census region definitions, see Appendix C. .)

Minority Enrollment by Field of Study

Tables 3, 4, and 5 present figures on the repres entation of minority students in twenty-one selected fields of study. (Cl assifications for these fields appear in Appendix A.) The data clearly show that the level of minority participation in graduate study varies subst antially by field (Table 3) but with relatively little difference betwe en public and private institutions (Tables 4 and 5). The enrollment patter n for each minority category is briefly highlighted in the following para graphs.[6]

Black Enrollment. The fields with higher than a verage proportions of Black representation were as follows:

Education	7.2 percent
Sociology	5.8 percent
Health Professions	5.5 percent

Fields with lower than average levels of Black r epresentation included:

Engineering	1.2 percent
Physics	1.2 percent
Biochemistry	1.2 percent
Other Life Sciences	1.2 percent

[6] Readers are reminded that, throughout this report, t he findings based on small numbers of students (e.g. within subfields or particular minority categories) must be regarded as quite tentative.

Spanish-surnamed Enrollment. Smaller variations are observed among fields in terms of the proportion of Spanish-surnamed students enrolled for graduate study. The fields with higher than average levels of Spanish-surnamed enrollment included sociology (2.0 percent) and arts and humanities (1.5 percent). These figures were fairly close to the overall average of 1.1 percent. Spanish-surnamed Americans were slightly under-represented in the natural science fields, although differences were generally small.

American Indian Enrollment. In almost every field of graduate study, less than one-half percent of students were reported to be of American Indian background.[7] Only for the field of health professions did the percentage figure rise to as high as 0.6 percent.

Asian American Enrollment. Fields with higher than average figures for Asian American enrollment included:

Engineering	3.3 percent
Biochemistry	3.2 percent
Microbiology	3.2 percent
Chemistry	3.2 percent
Physics	3.0 percent

Lower than average figures were reported in the following fields:

Arts and Humanities	0.9 percent
Psychology	0.8 percent
Education	0.6 percent

Distribution of Minority Students by Field

Tables 6 and 7 provide a different perspective on the graduate enrollment of minority students. The focus of these tables is on the distribution of each minority group among fields of study as compared to the distribution among fields of all graduate students. This focus helps to highlight a few distinctive aspects of minority graduate enrollment, including the relative concentration of minority students among fields.

[7] It might be noted that almost all institutions were able to report data for this minority category.

Table 6 shows the percentage distribution by field for the total student sample and for each minority category; Table 7 presents the corresponding number of students reported within each field. As shown, the largest proportions of total student enrollment were in the fields of education (25.9 percent), arts and humanities (14.5 percent), and basic social sciences (9.5 percent). A large proportion (21.6 percent) were enrolled in fields not specifically identified in this survey ("All Other Fields"). Except for Asian Americans, this pattern generally held true for each minority category.

A high percentage of Black students were enrolled in the field of education (43 percent), a proportion much larger than that for total student enrollment in this field (26 percent). The next highest concentrations were in arts and humanities (9.3 percent) and social sciences (9.1 percent). The percentages of Black students in the fields of engineering, life sciences and physical sciences were lower than the proportions in these fields reported for other minority groups or for all students.

Spanish-surnamed and American Indian students were primarily enrolled in the fields of education, arts and humanities, and social sciences. They were proportionately less represented in the life sciences and engineering than all graduate students, but were more likely than Black students to be enrolled in these fields. It can be noted that all four minority groups had higher percentages of students in the health professions than appeared for all graduate students.

Asian American students were enrolled proportionately more often in the fields of engineering (20.1 percent), life sciences (10.2 percent), physical sciences (11.1 percent) and mathematics (5.2 percent) than the total student sample or any other minority group. Conversely, they were less concentrated in education or the basic social sciences compared to other student categories.

Conclusion

This survey of Ph.D. granting institutions has demonstrated the increasing ability of colleges and universities to provide data on minority graduate enrollment according to specific fields of study. The relatively high rate of response is undoubtedly a reflection of the recent efforts of many institutions to improve their data-reporting capabilities with respect to minorities.

The survey results indicate substantial variation in minority representation among specific fields of study. To a lesser extent, minority representation also differed according to a number of institutional characteristics. The findings presented here, despite certain shortcomings, constitute the most recent data available on the enrollment of minorities in specific graduate fields and should be useful to all concerned with improving the accessibility of graduate study to Americans from minority backgrounds.

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TABLES

TABLE 1

Fall 1973 Enrollment Of Minority Graduate Students:[1]

Data From A Survey Of Ph.D. Granting Institutions

	Total Graduate Enrollment		Percent Minority				
	Number	Percent	Black	Spanish-Surnamed	American Indian	Asian American	Minority Subtotal
All Responding Institutions (n=154)	372,964	100.0	4.4	1.1	0.3	1.4	7.2
Control							
Public Institutions (n=93)	283,723	100.0	4.5	1.1	0.4	1.4	7.4
Private Institutions (n=61)	89,241	100.0	4.0	1.0	0.2	1.3	6.5
Graduate Student Enrollment Size[2]							
Below 200 (n=16)	1,488	100.0	1.5	0.5	0.3	2.4	4.7
201-1000 (n=36)	21,867	100.0	3.9	0.8	0.5	0.9	6.1
1001-3000 (n=57)	114,512	100.0	4.2	1.1	0.3	1.9	7.5
3001-5000 (n=26)	102,318	100.0	3.1	0.8	0.3	0.9	5.1
Over 5000 (n=19)	132,779	100.0	5.6	1.3	0.3	1.4	8.6
Ranking By Level Of DHEW Support[3]							
Top 25 (n=17)	92,834	100.0	4.7	1.3	0.3	1.8	8.1
Bottom 25 (n=12)	6,583	100.0	4.2	0.7	0.1	0.7	5.7
Other (n=125)	273,547	100.0	4.2	1.0	0.3	1.3	6.8

[1] Institutions were asked to include all students (full-time and part-time) taking coursework at the graduate level, except for those working toward M.D, J.D., D.D.S. or D.V.M. degrees.

[2] Taken from HEGIS survey data on Enrollment for Advanced Degrees, 1971.

[3] Ph.D. granting institutions were ranked according to level of DHEW support in fiscal year 1972.

TABLE 2

Representation of Minority Graduate Students Within Census Regions:[1]
Data From A Survey of Ph.D. Granting Institutions

Census Region	Total Enrollment Number	Total Enrollment Percent	Percent Minority In Each Region: Black	Spanish-Surnamed	American Indian	Asian American	Minority Subtotal
New England (n=14 institutions)	27,025	100.0	2.3	0.6	0.2	0.8	3.9
Middle Atlantic (n=38 institutions)	77,246	100.0	4.7	1.0	0 3	1.5	7.5
East North Central (n=31 institutions)	105,227	100.0	4.8	0.6	0.2	1.3	6.9
West North Central (n=11 institutions)	20,597	100.0	3.5	0.5	0.4	0.6	5.0
South Atlantic (n=27 institutions)	81,469	100.0	5.6	0.9	0.2	0.9	7.6
East South Central (n= 9 institutions)	16,196	100.0	6.3	0.3	0.1	0.8	7.5
West South Central (n=17 institutions)	39,768	100.0	4.4	1.7	0.8	1.5	8.4
Mountain (n=11 institutions)	24,801	100.0	1.1	3.1	0.7	1.1	6.0
Pacific (n=19 institutions)	50,438	100.0	4.1	2.6	0.5	3.9	11.1

[1]Data are based on information provided by 177 institutions, including 154 that reported minority data by field of study and another 23 that reported only total figures with no breakdown by field.

TABLE 3

Representation of Minority Students In Each Gra[illegible]duate Field:[1]

All Institutional Respondents
(n=154)

Field of Study[2]	Total Enrollment In Each Graduate Field		Percent Minority In Each Field				
	Number	Percent	Black	Spanish-Surnamed	American Indian	Asian American	Minority Subtotals
Arts and Humanities	53,920	100.0	2.8	1.5	0.3	0.9	5.5
Education	96,568	100.0	7.2	1.2	0.4	0.6	9.4
Engineering	31,273	100.0	1.2	0.8	0.1	3.3	5.4
Health Professions	13,238	100.0	5.5	1.2	0.6	2.0	9.3
Life Sciences	27,641	100.0	1.5	0.9	0.2	1.9	4.5
Biology	(5,027)	100.0	(2.6)	(0.7)	(0.1)	(1.7)	(5.1)
Biochemistry	(1,804)	100.0	(1.2)	(0.6)	(0.3)	(3.2)	(5.3)
Microbiology	(1,801)	100.0	(1.8)	(0.9)	(0.3)	(3.2)	(6.2)
Physiology	(1,110)	100.0	(1.5)	(0.9)	(0.3)	(2.0)	(4.7)
Other	(15,504)	100.0	(1.2)	(0.9)	(0.2)	(1.6)	(3.9)
Mathematical Sciences	12,446	100.0	2.5	0.6	0.2	2.1	5.4
Physical Sciences	21,629	100.0	1.4	0.7	0.2	2.6	4.9
Chemistry	(8,040)	100.0	(1.6)	(0.7)	(0.2)	(3.2)	(5.7)
Physics	(5,559)	100.0	(1.2)	(0.6)	(0.2)	(3.0)	(5.0)
Other	(6,560)	100.0	(1.2)	(0.7)	(0.2)	(1.5)	(3.6)
Basic Social Sciences	35,583	100.0	4.1	1.2	0.3	1.1	6.7
Economics	(5,766)	100.0	(1.9)	(0.8)	(0.3)	(1.6)	(4.6)
Psychology	(10,318)	100.0	(4.2)	(1.2)	(0.3)	(0.8)	(6.5)
Sociology	(4,566)	100.0	(5.8)	(2.0)	(0.2)	(1.3)	(9.3)
Other Basic Social Sciences	(12,969)	100.0	(4.6)	(1.3)	(0.4)	(1.0)	(7.3)
All Other Fields	80,666	100.0	5.1	1.0	0.3	1.2	7.6
Total, All Fields	372,964	100.0	4.4	1.1	0.3	1.4	7.2

[1] Based on data from the 154 Ph.D. granting institutions ab[illegible]le to provide minority enrollment data within field of study.

[2] Figures for subfields (in parentheses) sum to less than t[illegible]heir respective field totals because some institutions reported data for the total fie[illegible]ld category but not for subfields.

TABLE 4

Representation of Minority Students in Each Graduate Field:
Public Institutions
(n=93)

Field of Study[1]	Total Enrollment In Each Graduate Field		Percent Minority In Each Field				
	Number	Percent	Black	Spanish-Surnamed	American Indian	Asian American	Minority Subtotals
Arts and Humanities	39,441	100.0	2.6	1.6	0.3	1.0	5.5
Education	78,178	100.0	7.3	1.2	0.4	0.6	9.5
Engineering	21,160	100.0	1.0	0.8	0.1	3.4	5.3
Health Professions	10,255	100.0	5.9	1.3	0.7	2.0	9.9
Life Sciences	23,257	100.0	1.5	0.9	0.3	1.9	4.6
Biology	(3,320)	100.0	(2.6)	(0.8)	(0.1)	(1.7)	(5.2)
Biochemistry	(1,254)	100.0	(0.9)	(0.2)	(0.4)	(3.0)	(4.5)
Microbiology	(1,442)	100.0	(2.0)	(0.8)	(0.4)	(3.2)	(6.4)
Physiology	(832)	100.0	(0.8)	(1.1)	(0.4)	(2.2)	(4.5)
Other	(14,027)	100.0	(1.3)	(0.9)	(0.2)	(1.7)	(4.1)
Mathematical Sciences	9,872	100.0	2.5	0.6	0.2	2.2	5.5
Physical Sciences	16,530	100.0	1.3	0.7	0.3	2.5	4.8
Chemistry	(5,931)	100.0	(1.6)	(0.7)	(0.2)	(2.9)	(5.4)
Physics	(3,993)	100.0	(1.1)	(0.6)	(0.3)	(3.2)	(5.2)
Other	(5,170)	100.0	(1.1)	(0.7)	(0.2)	(1.4)	(3.4)
Basic Social Sciences	28,130	100.0	3.9	1.1	0.3	1.1	6.4
Economics	(4,483)	100.0	(1.8)	(0.8)	(0.3)	(1.6)	(4.5)
Psychology	(7,674)	100.0	(4.2)	(1.2)	(0.3)	(0.9)	(6.6)
Sociology	(3,489)	100.0	(5.0)	(2.1)	(0.2)	(1.5)	(8.8)
Other Basic Social Sciences	(10,524)	100.0	(4.2)	(1.0)	(0.4)	(1.1)	(6.7)
All Other Fields	56,900	100.0	5.6	1.0	0.4	1.3	8.3
Total, All Fields	283,723	100.0	4.5	1.1	0.4	1.4	7.4

[1] Figures for subfields (in parentheses) sum to less than their respective field totals because some institutions reported data for the total field category but not for subfields.

TABLE 5

Representation of Minority Students In Each Graduate Field:

Private Institutions
(n=61)

Field of Study[1]	Total Enrollment In Each Graduate Field		Percent Minority In Each Field				
	Number	Percent	Black	Spanish-Surnamed	American Indian	Asian American	Minority Subtotals
Arts and Humanities	14,479	100.0	3.5	1.2	0.4	0.7	5.8
Education	18,390	100.0	6.9	1.1	0.2	0.6	8.8
Engineering	10,113	100.0	1.6	0.9	0.1	3.0	5.6
Health Professions	2,983	100.0	4.2	0.9	0.1	2.0	7.2
Life Sciences	4,384	100.0	1.9	0.8	0.0	1.9	4.6
Biology	(1,707)	100.0	(2.5)	(0.4)	(0.0)	(1.7)	(4.6)
Biochemistry	(550)	100.0	(2.0)	(1.5)	(0.0)	(3.5)	(7.0)
Microbiology	(359)	100.0	(1.1)	(1.4)	(0.0)	(3.1)	(5.6)
Physiology	(278)	100.0	(3.6)	(0.4)	(0.0)	(1.4)	(5.4)
Other	(1,477)	100.0	(0.9)	(1.1)	(0.1)	(1.4)	(3.5)
Mathematical Sciences	2,574	100.0	2.2	0.7	0.1	1.6	4.6
Physical Sciences	5,099	100.0	1.5	0.6	0.1	2.9	5.1
Chemistry	(2,109)	100.0	(1.5)	(0.5)	(0.1)	(3.9)	(6.0)
Physics	(1,566)	100.0	(1.5)	(0.5)	(0.1)	(2.7)	(4.8)
Other	(1,390)	100.0	(1.5)	(0.7)	(0.0)	(1.9)	(4.1)
Basic Social Sciences	7,453	100.0	5.0	1.6	0.2	0.9	7.7
Economics	(1,283)	100.0	(2.2)	(0.8)	(0.3)	(1.6)	(4.9)
Psychology	(2,644)	100.0	(4.2)	(1.1)	(0.2)	(0.6)	(6.1)
Sociology	(1,077)	100.0	(8.3)	(1.5)	(0.2)	(0.9)	(10.9)
Other Basic Social Sciences	(2,445)	100.0	(6.0)	(2.5)	(0.3)	(0.7)	(9.5)
All Other Fields	23,766	100.0	4.1	0.8	0.2	1.0	6.1
Total, All Fields	89,241	100.0	4.0	1.0	0.2	1.3	6.5

[1]Figures for subfields (in parentheses) sum to less than their respective field totals because some institutions reported data for the total field category but not for subfields.

TABLE 6

Fall 1973 Enrollment of Minority Graduate Students:[1]
Percentage Distributions by Field of Study

Field of Study[2]	Total Enrollment	Minority Enrollment			
		Black	Spanish-Surnamed	American Indian	Asian American
Arts and Humanities	14.5	9.3	19.9	13.9	9.5
Education	25.9	43.0	27.9	32.5	11.6
Engineering	8.4	2.3	6.6	3.1	20.1
Health Professions	3.6	4.5	4.1	6.4	5.1
Life Sciences	7.4	2.6	6.2	5.3	10.2
Biology	(1.4)	(0.6)	(0.9)	(0.3)	(1.7)
Biochemistry	(0.5)	(0.1)	(0.3)	(0.4)	(1.1)
Microbiology	(0.5)	(0.2)	(0.4)	(0.5)	(1.1)
Physiology	(0.3)	(0.1)	(0.3)	(0.3)	(0.4)
Other	(4.2)	(1.2)	(3.6)	(2.9)	(5.0)
Mathematical Sciences	3.3	1.9	2.0	2.0	5.2
Physical Sciences	5.8	1.8	3.5	4.2	11.1
Chemistry	(2.2)	(0.8)	(1.3)	(1.3)	(5.0)
Physics	(1.5)	(0.4)	(0.8)	(1.0)	(3.3)
Other	(1.8)	(0.5)	(1.1)	(0.9)	(1.9)
Basic Social Sciences	9.5	9.1	10.7	9.3	7.5
Economics	(1.6)	(0.7)	(1.2)	(1.3)	(1.8)
Psychology	(2.8)	(2.7)	(3.0)	(2.5)	(1.7)
Sociology	(1.2)	(1.6)	(2.2)	(0.9)	(1.2)
Other Basic Social Sciences	(3.5)	(3.7)	(4.1)	(4.2)	(2.6)
All Other Fields	21.6	25.5	19.3	23.4	19.7
Total, All Fields	100.0	100.0	100.0	100.0	100.0

[1]Based on data from 154 institutions able to provide minority enrollment data within field of study.

[2]Figures in parentheses sum to less than their respective subtotals because some institutions could report data only for the total field category but not for subfields.

TABLE 7

Fall 1973 Enrollment of Minority Graduate Students: [1]

Number in Each Field of Study

Field of Study[2]	Total Enrollment	Minority Enrollment			
		Black	Spanish-Surnamed	American Indian	Asian American
Arts and Humanities	53,920	1,516	794	164	484
Education	96,668	6,990	1,113	384	587
Engineering	31,273	368	263	37	1,020
Health Professions	13,238	727	164	76	260
Life Sciences	27,641	419	247	62	519
Biology	(5,027)	(130)	(34)	(4)	(84)
Biochemistry	(1,804)	(22)	(11)	(5)	(57)
Microbiology	(1,801)	(33)	(17)	(6)	(57)
Physiology	(1,110)	(17)	(10)	(3)	(22)
Other	(15,504)	(191)	(145)	(34)	(253)
Mathematical Sciences	12,446	305	78	23	262
Physical Sciences	21,629	299	140	49	565
Chemistry	(8,040)	(129)	(53)	(15)	(253)
Physics	(5,559)	(68)	(31)	(12)	(169)
Other	(6,560)	(78)	(44)	(10)	(98)
Basic Social Sciences	35,583	1,471	426	110	380
Economics	(5,766)	(109)	(47)	(15)	(92)
Psychology	(10,318)	(435)	(121)	(30)	(87)
Sociology	(4,566)	(263)	(89)	(10)	(61)
Other Basic Social Sciences	(12,969)	(592)	(163)	(49)	(130)
All Other Fields	80,666	4,146	769	276	999
Total, All Fields	372,964	16,241	3,994	1,181	5,076

[1] Based on data from 154 institutions able to provide minority enrollment data within field of study.

[2] Figures in parentheses sum to less than their respective subtotals because some institutions could report data only for the total field category but not for subfields.

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APPENDIX A:

Survey Questionnaire

OMB No. 99-R0265. Exp. 6/74

American Council on Education
Higher Education Panel
Survey No. 19
Fall 1973 Enrollment of Minority Graduate Students[1]

Major Field	Total Graduate Enrollment[2]	Selected Minority Enrollment[3]			
		Black	Spanish-Surnamed American[4]	American Indian	Asian American
Arts and Humanities					
Education					
Engineering					
Health Professions					
Life Sciences TOTAL					
Biology (general)					
Biochemistry					
Microbiology					
Physiology					
Other					
Mathematical Sciences					
Physical Sciences TOTAL					
Chemistry					
Physics					
Other					
Basic Social Sciences TOTAL					
Economics					
Psychology					
Sociology					
Other basic social sciences					
All Other Fields					
TOTAL					

See other side for footnotes and guidelines for discipline classification.

Please indicate the source or manner by which you obtained the above figures:

___Departmental records or counts
___Student designation on registration records
___Other (please specify)_____

_____

Person completing this form:

Name_____

Office_____

Telephone_____

Footnotes

[1]Data should be based on all students, full-time and part-ti
or first professional degree (or equivalent), and are takin
ate level. Do not include students taking work toward M.D.
degrees.

[2]Figures in this column should include minority and nonminor
and foreign nationals.

[3]The term "minority" refers to students in the four categori
tionals (including foreign-born students on immigrant visas
students studying in the United States under a student or t

[4]Include only US nationals (including foreign born students
can, Central-American, South-American, Cuban, Puerto Rican,
Spanish origin. Do not include foreign students studying i
student or temporary visa.

me, who hold the bachelor's
g coursework at the gradu-
, J.D., D.D.S., or D.V.M.

ity students, and both U.S.

es listed who are U.S. na-
). Do not include foreign
emporary visa.

on immigrant visas) of Mexi-
Latin-American, or other
n the United States under a

GUIDELINES FOR DISCIPLINE CLASSIFICAT

Arts and Humanities
Includes:
English
Literature
Foreign Languages
Fine and Applied Arts
Architecture
History
Philosophy
Religion

Health Professions
Includes:
Nursing
Hospital and Health Care
Administration
Public Health
Pharmacy
Other Allied Health Fields
EXCLUDE:
Medicine
Veterinary medicine
Dentistry

Other Life Sciences
Includes:
Agriculture
Forestry
Botany
Zoology
Anatomy
Entomology
and related fields

Mathematical Sciences
Includes:
Mathematics
Statistics
Computer Sciences
Data processing
Systems analysis
and related fields

ION

Other Physical Sciences
Includes:
Astro
Atmos
Meteo
Geolo
Geoph
Metal
Ocean
Paleo
Pharm
aceutical chemistry

Other Basic Social Sciences
Includes:
Anthr
Arche
Geogr
Polit
Gover
Demog
Other Fields
All other fields not classified
above, including
Busi
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APPENDIX B:

Institutional Response to the Survey

APPENDIX B

Institutional Response to the Survey

One of the important findings of this survey is reflected in the rate of response that was achieved. Fully seventy percent of the doctorate-granting institutions in the survey were able to provide minority enrollment data for their graduate students according to, or closely approximating, the twenty-one categories of graduate fields of study that had been requested. An additional ten percent could not report such detailed data, but did provide minority graduate enrollment figures for their institutions as a whole. The overall survey results can be summarized as follows:

Provided data by field of study	70 percent
Provided minority enrollment data by totals only	10 percent
Could not respond - did not have the data available[1]	14 percent
Questionnaires arrived too late for processing	1 percent
Did not respond	5 percent
	100 percent

For this survey in particular, these results show a substantial rate of response. On the basis of past survey experience in attempting to collect minority data within fields, it had been anticipated that fewer than half of the institutions would have been able to complete the questionnaire. The rate of response achieved here is undoubtedly a reflection of the efforts of many institutions during recent years to improve their data-reporting capabilities on minorities.

The responding institutions had assembled their minority enrollment information primarily from records that students voluntarily completed at registration. This was the case with 50 percent of responding institutions.

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[1] The 30 institutions that were unable to respond cited a variety of factors such as data being incomplete or not readily available in the format requested. Fifty-three percent of these institutions were privately controlled. A relatively large proportion (14 institutions) were from New England or Middle Atlantic states.

Another 12 percent drew upon some other institution-wide source (e.g. Graduate School Records, Office of Institutional Research). Twenty percent had compiled data on the basis of departmental records and another 14 percent had made use of a combination of sources.[2]

It should be understood that the data supplied by respondents were often their best estimates and thus are subject to error. As a result, the cumulative data reported here must be taken as quite tentative.

Comparison of Survey Institutions With Other Ph.D. Granting Institutions

In order to assist the reader in determining the representativeness of the survey findings, Tables B1, B2 and B3 present comparisons of the institutions involved in the survey with the total population of Ph.D. granting institutions (as determined by a January 1974 listing of the National Research Council). Comparisons with this population (N=288) have been made with: (a) the Ph.D. granting institutions that, as members of the Higher Education Panel, were sent questionnaires (N=220); (b) survey nonrespondents (N=66); and (c) survey respondents (N=154).

Panel Institutions Compared to Total Population

The data in Table B1 provide a profile of both the population (N=288) and the HEP sample (N=220) of Ph.D. granting colleges and universities. In brief, it can be seen that, of the institutions in the population:

69 percent are universities[3]
61 percent have graduate enrollments of over 1,000 students
60 percent are located in central cities

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[2] Notably, of the 23 institutions that could provide only total enrollment data within each minority group (rather than a breakdown by field of study) none had utilized departmental information; they had relied almost totally on registration records.

[3] Following definitions utilized by the U.S. Office of Education. See Education Directory for greater detail.

56 percent are publicly controlled
44 percent are from New England or Atlantic coast states
39 percent are from Central states
18 percent are from Western states

The 220 Panel institutions show generally similar characteristics to those of this total population of Ph.D. granting institutions, particularly in terms of type and metropolitan location. Panel institutions are somewhat more likely, however, to be universities (73 percent) and to have graduate enrollments of over 1,000 students (69 percent); they are slightly less likely to be located in central cities (56 percent).

Nonrespondents Compared to the Total Population

Although the survey questionnaires were sent out to 220 institutions, 66 institutions were not able to respond.[4] As compared to the universe of Ph.D. granting institutions (Table B2), the survey nonrespondents were somewhat more likely to be privately controlled, located in nonmetropolitan areas or in New England, Middle Atlantic and Mountain states. Survey nonrespondents were also more likely than institutions in general to report graduate enrollments of over 1,000 students.

Respondents Compared to All Other Ph.D. Granting Institutions

Table B3 presents a comparison between the 154 institutions that responded to the questionnaire and all other institutions in the population (N=134), including both Panel nonrespondents and those that were not in the Panel. Several specific differences can be noted

Compared to other Ph.D. granting institutions, survey respondents were more likely to be:

Universities
Public

[4]These 66 institutions include those that gave only total information (N=23) as well as those that could not provide data (N=30) and 13 others that did not return questionnaires by the cut-off date.

Institutions with graduate enrollments of over 1,000 students
Institutions ranking in the top 25 according to 1972 levels of DHEW support
Located in suburban or nonmetropolitan areas
Located in the North Central and South Atlantic states

Conversely, those Ph.D. granting institutions that are not included in the survey results are more likely than respondents to be:

Four-year institutions
Private
Institutions with small graduate enrollments
Located in central cities
Located in South Central and Western states

These differences are not always large but do suggest the need for caution in making inferences with respect to all Ph.D. granting institutions.

TABLE B1

Comparison of All Ph.D. Granting Institutions and Those Ph.D.-Granting Institutions That are Members of the Higher Education Panel (In Percentages)

Institutional Characteristics	All Ph.D. Granting Institutions[1] (N=288)	Ph.D. Granting Institutions In The Higher Education Panel (N=220)
Type		
Four-Year College	28	24
University	69	73
Independent Medical School	3	3
Total Percentage	100%	100%
Control		
Public	56	58
Private	44	42
Total Percentage	100%	100%
Total Enrollment for Advanced Degrees[2]		
Below 200	16	8
201-1000	24	23
1001-3000	35	38
3001-5000	16	19
Over 5000	10	12
Total Percentage	100%	100%
Ranking by Level of DHEW Support[3]		
Top 25	9	11
Bottom 25	7	6
Other	84	83
Total Percentage	100%	100%
SMSA Location		
Suburban Fringe of SMSA	17	18
Central City	60	56
Non-SMSA	22	25
Unknown	1	1
Total Percentage	100%	100%
Census Regions		
New England	9	10
Middle Atlantic	22	22
North Central	20	23
South Atlantic	13	14
South Central	19	14
Mountain	7	8
Pacific	11	10
Total Percentage	100%	100%

[1] Based on a list maintained by the National Research Council, National Academy of Sciences as of January 1974.

[2] Taken from HEGIS survey data on Enrollment for Advanced Degrees, 1971.

[3] Based on a ranking of Ph.D. granting institutions according to level of DHEW support in fiscal year 1972.

TABLE B2

Characteristics of Higher Education Panel Institutions That Did Not Respond to the Minority Enrollment Survey

(In Percentages)

Institutional Characteristics	Survey Nonrespondents (N=66)
Type	
Four-Year College	29
University	70
Independent Medical School	1
Total Percentage	100%
Control	
Public	52
Private	48
Total Percentage	100%
Total Enrollment for Advanced Degrees[1]	
Below 200	3
201-1000	23
1001-3000	41
3001-5000	23
Over 5000	11
Total Percentage	100%
Ranking by Level of DHEW Support[2]	
Top 25	10
Bottom 25	2
Other	88
Total Percentage	100%
SMSA Location	
Suburban Fringe of SMSA	12
Central City	59
Non-SMSA	29
Unknown	0
Total Percentage	100%
Census Regions	
New England	12
Middle Atlantic	26
North Central	17
South Atlantic	11
South Central	12
Mountain	12
Pacific	11
Total Percentage	100%

[1] Taken from HEGIS survey data on Enrollment for Advanced Degrees, 1971.

[2] Based on a ranking of Ph.D. granting institutions according to level of DHEW support in fiscal year 1972.

TABLE B3

Comparison of Institutions Responding to HEP 19
And Other Ph.D. Granting Institutions

(In Percentages)

Institutional Characteristics	Survey Respondents (N=154)	Other Ph.D.-Granting Institutions (N=134)
Type		
Four-Year College	21	35
University	75	64
Independent Medical School	4	1
Total Percentage	100%	100%
Control		
Public	60	50
Private	40	50
Total Percentage	100%	100%
Total Enrollment for Advanced Degrees[1]		
Below 200	10	21
201-1000	23	24
1001-3000	38	34
3001-5000	17	14
Over 5000	12	7
Total Percentage	100%	100%
Ranking By Level Of DHEW Support[2]		
Top 25	11	6
Bottom 25	8	5
Other	81	89
Total Percentage	100%	100%
SMSA Location		
Suburban Fringe of SMSA	21	13
Central City	55	67
Non-SMSA	23	20
Unknown	1	0
Total Percentage	100%	100%
Census Regions		
New England	8	10
Middle Atlantic	21	22
North Central	25	14
South Atlantic	15	10
South Central	14	24
Mountain	6	8
Pacific	10	12
Total Percentage	100%	100%

[1] Taken from HEGIS survey data on Enrollment for Advanced Degrees, 1971.

[2] Based on a ranking of Ph.D. granting institutions according to level of DHEW support in fiscal year 1972.

APPENDIX C:

Classification of States by Census Regions

CENSUS REGIONS

NEW ENGLAND

Maine
New Hampshire
Vermont
Massachusetts
Rhode Island
Connecticut

MIDDLE ATLANTIC

New York
New Jersey
Pennsylvania

EAST NORTH CENTRAL

Ohio
Indiana
Illinois
Michigan
Wisconsin

WEST NORTH CENTRAL

Minnesota
Iowa
Missouri
North Dakota
South Dakota
Nebraska
Kansas

SOUTH ATLANTIC

Delaware
Maryland
D.C.
Virginia
West Virginia
North Carolina
South Carolina
Georgia
Florida

EAST SOUTH CENTRAL

Kentucky
Tennessee
Alabama
Mississippi

WEST SOUTH CENTRAL

Arkansas
Louisiana
Oklahoma
Texas

MOUNTAIN

Montana
Idaho
Wyoming
Colorado
New Mexico
Arizona
Utah
Nevada

PACIFIC

Washington
Oregon
California
Alaska
Hawaii

Other Reports of the Higher Education Panel
American Council on Education

Blandford, B. and Dutton, D. **Survey of First-Year Graduate and Postdoctoral Enrollment in Science and Engineering.** Higher Education Panel Report, No. 1, August, 1971.

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Astin, A., Blandford, B., and Mahn, T. **Freshman Class Vacancies in Fall 1971 and Recent Trends in Enrollment of Minority Freshmen.** Higher Education Panel Report, No. 3, February, 1972.

Changes in Graduate Programs in Science and Engineering 1970–72 and 1972–1974. Science Resources Studies Highlights. Washington: National Science Foundation, July, 1972.

Blandford, B. and Sell, C. **Enrollment of Junior-Year Students (1970 and 1971).** Higher Education Panel Report, No. 5, April, 1972.

Trexler, J. and Blandford, B. **What College Presidents Are Reading.** Higher Education Panel Report, No. 6, March, 1972.

Trexler, J. and Kent, L. **Commercial Theme-Writing Services.** Higher Education Panel Report, No. 7, June, 1972.

Furniss, W. T. **Faculty Tenure and Contract Systems: Current Practice.** ACE Special Report, July, 1972.

Bayer, A. E. and Astin, A. W. **War Protest on U.S. Campuses During April, 1972.** Higher Education Panel Report, No. 9, May, 1972.

Blandford, B. A. and Trexler, J. C. **Expected First-Year Graduate Enrollment in Science and Engineering, Fall 1972.** Higher Education Panel Report, No. 10, August, 1972.

Blandford, B. A. **Student Participation on Institutional Governing Boards.** Higher Education Panel Report, No. 11, October, 1972.

Dutton, J. E. and Blandford, B. A. **Enrollment of Junior-Year Students (1971 and 1972).** Higher Education Panel Report, No. 12, April, 1973.

Dutton, J. E. **Courses and Enrollment in Ethnic/Racial Studies.** Higher Education Panel Report, No. 14, August, 1973.

Dutton, J. E. and Jenkins, M. D. **The Urban Involvement of Colleges and Universities.** Higher Education Panel Report, No. 15, August, 1973.

Dutton, J. E. and El-Khawas, E. H. **Production of Doctorates in Selected Fields, 1972–1975.** Higher Education Panel Report, No. 16, April, 1974.

Dutton, J. E. **First-Year Enrollment for Masters or Higher Degrees, Fall 1973.** Higher Education Panel Report, No. 17, April, 1974.

El-Khawas, E. H. and Kinzer, J. L. **The Impact of Office of Education Student Assistance Programs, Fall 1973.** Higher Education Panel Report, No. 18, April, 1974.

Single copies of the above reports may be obtained from the Higher Education Panel, American Council on Education, One Dupont Circle, Washington, D.C. 20036.